REMARKS

Claim Rejections – 35 U.S.C. § 102(e)

Amendments

The Applicants believes that the original independent claims are distinguishable from *Hayes*. However, in order to further distinguish the present invention from *Hayes* so as to obtain a Notice of Allowance as early as possible, Applicants have amended the claims based on one or more additional features disclosed in the specification, for example, page 7, second and third paragraphs, page 8, first and third paragraphs, page 9, first paragraph and page 11, last paragraph to page 13, first paragraph of the specification. For the Examiner's convenience, the following is a list of features that distinguish the Applicants' invention from *Hayes*. A specific discussion of the claim amendments is presented following this list. It should be noted that some of the arguments in favor of allowability are based on aspects that were already recited in the claims as originally filed.

a) "A measurement base line direction is a horizontal direction and is also a direction orthogonal to the moving direction of the apparatus".

b) The location data calculated by the first location calculation section "includes a distance in the measurement base line direction and a distance in the vertical direction".

c) The first location section calculates the depth using "the distance in the vertical direction included in" the location data.

d) "An azimuth calculation section" is further provided.

e) The second location calculation section "calculates deviations of the cable with respect to the predetermined location for latitude and longitude using an azimuth in the measurement base line direction and the distance in the measurement base line direction included in" the location data calculated by the first location calculation section, and calculates plane location data of the cable "for latitude and longitude using the calculated deviations and latitude and longitude included in the location data acquired by the location data acquiring section".

f) While the apparatus is being moved, the plane location data of the cable and the depth of the cable are continuously obtained.]

Independent claims 1, 4 and 5 – Arguments based on the limitations already recited in the original independent claims.

Hayes merely discloses that a waveform generator 1 applies a voltage to a conductor 22 via a ground-access point 243 (FIG. 3 and column 7, lines 32-54), that the horizontal position of the conductor 22 is determined by moving a receiver unit until signals from antennas 20 and 21 situated in the same horizontal plane are equal, and that the depth of the conductor 22 is determined by signal decay based on the intensity of a signal received from an antenna 23 positioned vertically above a midpoint between the antennas 20 and 21 (FIGS. 1 and 2a, and column 7, lines 19-31).

In other words, *Hayes* merely discloses the measurement of the horizontal position and the depth of the conductor 22 based on **only** the signals received from the antennas. *Hayes* fails to disclose or suggest the limitations recited in the independent claims, that is, the location data acquiring section (step), the first location calculation section (step), and the second location calculation section (step).

By having such section or steps, the present invention can determine the plane location data and the depth of the cable based on latitude and longitude of the predetermined location, etc., even if the cable is not positioned just below the predetermined location. As a result, unlike *Hayes*, it is not necessary in the present invention to move the apparatus to a location just above the cable. Therefore, even if an object obstructing the determination of the cable location exists on the ground just above the cable, the present invention can obtain the plane location data and the depth of the cable by moving the apparatus along the cable while keeping the apparatus away from the cable by a certain distance.

Moreover, since it is necessary for an operator of *Hayes'* invention to adjust the position of the receiver unit in the direction of arrows shown in FIG. 3 until the signals from the antennas 20 and 21 are equal, it takes a considerable time to determine the horizontal position of the conductor 22. In contrast, the present invention does not require such an adjustment by having the aforementioned section or steps, so that the present invention can calculate the plane location data and the depth of the cable within a shorter time than that of *Hayes.*

Furthermore, although the Examiner points out column 8, lines 8-14 of *Hayes* with respect to the claimed location data acquiring section, *Hayes* merely discloses the display of various pieces of information. *Hayes* fails to disclose or suggest obtaining the horizontal position and the depth of the conductor 22. For example, although column 8, lines 13-14 of *Hayes* mentions a GPS, it merely discloses "a GPS indicator to show the exact geographic location of the conductor". *Hayes* fails to disclose or suggest the calculation of the horizontal position and the depth of the conductor 22 using a signal from the GPS in addition to signals received from the antennas.

Arguments based on the limitations newly incorporated into the independent claims:

Hayes merely discloses the matters as explained above, and thus *Hayes* fails to disclose or suggest the feature of Items a-e, in particular, Items b, d and e.

Moreover, as shown in FIGS. 2a and 3 of *Hayes*, *Hayes* determines the horizontal position of the receiver unit by moving the receiver unit in the direction in which the unit traverses the conductor 22. Therefore, *Hayes*' invention would be liable to problems similar to that of Japanese Unexamined Patent Application, First Publication No. 2001-356177 cited in the Description of Related Art of the specification of the present application, that is, it is possible to obtain only discrete location of the cable. Unlike the present invention, it is impossible for *Hayes'* invention to determine the location of the cable continuously. *Hayes* fails to disclose or suggest the feature of Item *f.*

Dependent Claim 3

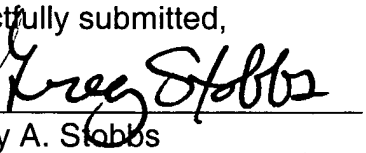
With respect to GPSs, *Hayes* merely discloses the GPS indicator to show the exact geographic location of the conductor as explained above. *Hayes* fails to disclose or suggest the use of RTS-GPS for acquiring the location data from the apparatus itself including latitude and longitude of the predetermined location. In contrast, by using the RTK-GPS, it is possible to obtain the location data with high precision without employing a large device such as a gyrocompass.

In view of the above amendment, applicant believes the pending application is in condition for allowance.

Applicant believes no fee is due with this response. However, if a fee is due, please charge our Deposit Account No. 08-0750, under Order No. 5259-000039/US from which the undersigned is authorized to draw.

Dated: January 27, 2006

Respectfully submitted,

By 

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